

REMARKS

Upon entry of the instant Amendment, claims 14-20 and 31-49 will be pending in the application. Claims 14, 33 and 42 are amended and claims 47-49 are added. Support for the amendment to claims 14, 33 and 42 can be found in Fig. 3 and paragraph [0024] of the instant published application No. 2006/0071304. Support for new claims 47-49 can be found in paragraph [0020] of the instant published application No. 2006/0071304. Reconsideration of the rejected claims in view of the following remarks is respectfully requested.

Telephone Interview

Applicant appreciates the courtesy extended by Examiner Nguyen in the Telephone Interview of June 12, 2008.

In the Interview, Applicant proposed possible amendments to the claims to possibly place the application in condition for allowance.

The Examiner agreed that reciting certain proposed features in addition to other features of the application would advance prosecution. It was greed that Applicant should file a Response with the proposed claim amendments so that they can be formally considered.

Finally, the Examiner agreed to contact Applicant's representative via telephone upon receiving the Response to discuss the same with the aim of placing the application in condition for allowance.

35 U.S.C. § 102(b) Rejection

Claims 14-17, 32-36 and 40-45 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 7,049,669 to MA et al. This rejection is respectfully traversed.

The Examiner asserted that this document discloses or suggests all the features recited in these claims including the recited substrate contact. Notwithstanding the Office Action assertions as to what MA discloses, Applicants submit that MA fails to disclose, or even suggest, for example, a bottom surface of the substrate contact being arranged over a portion of the substrate (claims 14, 33 and 42).

Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called substrate contact 36 “reaches from … to the backside metal layer 30.” Thus, no portion of the bottom side of the so-called contact 36 is arranged over a portion of the substrate 1. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

Furthermore, claims 14, 33 and 42 additionally recite that the substrate contact helps to keep an active region of the semiconductor device at a known voltage potential and acts as a collection source for stray currents. Such features also appear to be lacking in MA.

Moreover, Applicants submit that dependent claims 15-17, 32, 34-36, 40, 41 and 43-45 are allowable at least for the reason that these claims depend from allowable

base claims 14, 33 and 42, and because these claims recite additional features that further define the present invention.

Applicants request that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 102(b).

35 U.S.C. § 103(a) Rejections

Over Ma with Rice

Claims 18 and 19 as well as 37 and 38 were rejected under 35 U.S.C. § 103(a) as unpatentable over MA in view of U.S. Patent No. 4,738,936 to RICE. This rejection is respectfully traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in RICE, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverses this rejection.

Notwithstanding the Office Action assertions as to each of MA and RICE discloses or suggests, Applicants submit that neither MA and RICE discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the substrate (claims 14 and 33).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows

the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 “reaches from ... to the backside metal layer 30.” Thus, no portion of the bottom side of the so-called substrate contact 36 is arranged over a portion of the substrate 1. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

RICE does not cure the deficiencies of MA. Applicants do not dispute that RICE discloses an FET with a source contact (see title). However, in RICE, the gate 74 is not arranged between the source 60 and the drain 76 are required by claims 14 and 33 (see Fig. 1H). Furthermore, the Examiner has failed to identify any language in RICE which discloses or suggests that little or no current flows through the substrate contact (claim 14).

Furthermore, claims 14 and 33 additionally recite that the substrate contact helps to keep an active region of the semiconductor device at a known voltage potential and acts as a collection source for stray currents. Such features also appear to be lacking in MA and RICE.

Applicants submit that there is no reason to modify MA and RICE in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. There must be some suggestion or basis in the art for such a modification, which Applicant submits is lacking. Therefore,

Applicants submit that the invention as recited in at least independent claims 14 and 33 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claims 18, 19, 37 and 38 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that no proper combination of MA and RICE discloses or even suggests, in combination, the features recited in claims 18, 19, 37 and 38 in combination with the features recited in claims 14 and 33.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Ma with Herzum

Claims 20 and 39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over MA in view of U.S. Patent Application Publication No. 2004/0238871 to HERZUM et al. This rejection is respectfully traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of these dependent claims. However, the Examiner asserted that such features are disclosed in HERZUM, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverse this rejection.

Notwithstanding the Office Action assertions as to each of MA and HERZUM discloses or suggests, Applicants submit that neither MA and HERZUM discloses, or

even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the substrate (claims 14 and 33).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 “reaches from ... to the backside metal layer 30.” Thus, no portion of the bottom side of the so-called contact 36 is arranged over a portion of the substrate 1 as required by claims 14 and 33. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

HERZUM does not cure the deficiencies of MA. Applicants do not dispute that HERZUM discloses that the substrate contact 12 is in electrical contact with the source 14 (see paragraph [0036]). However, HERZUM explains at paragraph [0036] that the current flows from the source to the contact 12. Thus, HERZUM cannot be read to disclose or suggest that little or no current flows through the substrate contact (claim 14). Furthermore, as HERZUM merely explains that the so-called contact 12 is a sinker, the Examiner has failed to explain how the disclosed sinker can be read to disclose or suggest a ring substrate contact (claim 33).

Furthermore, claims 14 and 33 additionally recite that the substrate contact helps to keep an active region of the semiconductor device at a known voltage potential and

acts as a collection source for stray currents. Such features also appear to be lacking in MA and HERZUM.

Applicants submit that there is no reason to modify MA and HERZUM in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. Therefore, Applicants submit that the invention as recited in at least independent claims 14 and 33 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claims 20 and 39 are allowable at least for the reason that these claims depend from allowable base claims and because these claims recite additional features that further define the present invention. In particular, Applicants submit that no proper combination of MA and HERZUM discloses or even suggests, in combination, the features recited in claims 20 and 39 in combination with the features recited in claims 14 and 33.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

Over Ma with Chang

Claim 31 was rejected under 35 U.S.C. § 103(a) as being unpatentable over MA in view of U.S. Patent No. 6,624,030 to CHANG et al. This rejection is traversed.

The Examiner acknowledged that MA lacks, among other features, the recited features of this dependent claim. However, the Examiner asserted that such features are disclosed in CHANG, and that it would have been obvious to one of ordinary skill in the art to combine the teachings of these documents. Applicants respectfully disagree with the Examiner's assertions and traverse this rejection.

Notwithstanding the Office Action assertions as to each of MA and CHANG discloses or suggests, Applicants submit that neither MA and CHANG discloses, or even suggests, for example, that the substrate contact or ring substrate contact abuts a side of the source or is arranged adjacent to a side of the source without an intervening shallow trench isolation structure in combination with a bottom surface of the substrate contact being arranged over a portion of the substrate (claim 14).

As explained above, Applicants do not dispute that MA apparently discloses a so-called substrate contact 36 adjacent the source 34 (see Fig. 3). However, MA shows the so-called substrate contact 36 extending to the metal layer 30 and explains at col. 4, lines 36-44 that the so-called contact 36 "reaches from ... to the backside metal layer 30." Thus, no portion of the bottom side of the so-called substrate contact 36 is arranged over a portion of the substrate 1 as required by claims 14 and 33. Furthermore, the Examiner has failed to identify any language in MA which discloses or suggests that little or no current flows through the substrate contact (claim 14).

CHANG does not cure the deficiencies of MA. Applicants do not dispute that CHANG discloses that a substrate contact 24. However, CHANG explains at col. 3, lines 14-17 that the current flows from the electrode 32 to electrode 34. Thus, CHANG

cannot be read to disclose or suggest that little or no current flows through the substrate contact (claim 14).

Furthermore, claims 14 and 33 additionally recite that the substrate contact helps to keep an active region of the semiconductor device at a known voltage potential and acts as a collection source for stray currents. Such features also appear to be lacking in MA and CHANG.

Applicants submit that there is no reason to modify MA and CHANG in a manner which would render obvious Applicants' invention, and additionally, Applicants submit that there is no rationale disclosed or suggested in the prior art to modify the applied reference in the manner suggested by the Examiner. The Examiner's opinion does not provide a proper basis for these features or for the motivation to modify this document in the manner suggested by the Examiner. Therefore, Applicants submit that the invention as recited in at least independent claim 14 is not rendered obvious by any reasonable inspection and interpretation of the disclosure of the applied references.

Finally, Applicants submit that dependent claim 31 is allowable at least for the reason that this claim depends from allowable base claim 14 and because this claim recites additional features that further define the present invention. In particular, Applicants submit that no proper combination of MA and CHANG discloses or even suggests, in combination, the features recited in claim 31 in combination with the features recited in claim 14.

Applicant requests that the Examiner reconsider and withdraw the rejection of the above-noted claims under 35 U.S.C. § 103(a).

New Claims are also Allowable

Applicants submit that the new claims 47-49 are allowable over the applied art of record. Specifically, claims 47-49 depend from claims which are believed to be allowable and recite a combination of features which are clearly not disclosed or suggested by the applied art of record. Accordingly, Applicants respectfully request consideration of these claims and further request that the above-noted claims be indicated as being allowable.

CONCLUSION

In view of the foregoing amendments and remarks, Applicants submit that all of the claims are patentably distinct from the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue. The Examiner is invited to contact the undersigned at the telephone number listed below, if needed. Applicants hereby make a written conditional petition for extension of time, if required. Please charge any deficiencies in fees and credit any overpayment of fees to Deposit Account No. 09-0458.

Respectfully submitted,
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June 12, 2008
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